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# Canadian Forestry Service-Maritimes
# TECHNICAL NOTE

## A SYNOPSIS OF FOREST PEST CONDITIONS IN THE MARITIMES IN 1986

Each year, the Forest Insect and Disease Survey assesses forest pest conditions in the Maritimes, often jointly with co-operating agencies. Results are reported in a variety of formats throughout the year. A series of "Highlights" are issued as technical notes during the summer. Detailed information is provided on a regional scale annually in an Information Report and on a national scale in a Canadian Forestry Service Headquarters publication.

The following is a brief summary of forest pest conditions encountered in the Maritimes Region in 1986. Details will be available in CFS-Maritimes Information Report M-X-161.

Spruce budworm caused moderate and severe defoliation of balsam fir and spruce over 927 000 ha in New Brunswick, 288 600 ha in Nova Scotia and 64 600 ha in Prince Edward Island. Control operations were conducted over 545 500 ha in New Brunswick and 58 177 ha in Nova Scotia. It is predicted that in New Brunswick about 1.7 million hectares of forest will be affected by defoliation in 1987. In Nova Scotia, populations capable of causing damage are expected on the northern mainland. In Prince Edward Island, it is predicted that the area of moderate and severe defoliation will decrease and most of the defoliation is expected to occur in Queens and southeastern Kings counties.

Stillwell's syndrome, the sudden death of balsam fir trees, mostly in spruce budworm affected stands, reached near epidemic proportions over large areas in the western half of New Brunswick. Accumulating losses due to this condition have prompted the consideration of salvage operations by some forest managers.

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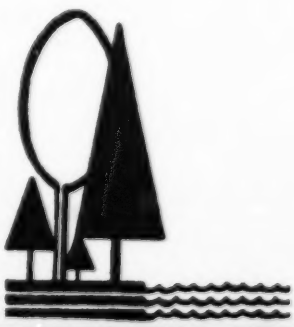

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Spruce beetle remained active in the few infested areas of southern New Brunswick and was observed in other parts of the Province. The decline of major outbreaks continued in both Nova Scotia and Prince Edward Island but not before the insect caused considerable white spruce mortality in these provinces.

Eastern larch beetle populations continued on the downward trend started in 1984 over much of the Region but leaving behind great numbers of dead larch trees. An average of 4.3% of the larch was killed annually on one observation plot during the past seven years.

European larch canker remained confined to southeastern New Brunswick and mainland Nova Scotia.

The North American race of Scleroderris canker, a disease of pines, was found in only one area of New Brunswick. The European race of the disease was not found for the fifth consecutive year in any of the eight areas under surveillance.

The seedling debarking weevil has caused considerable seedling mortality in all three provinces with damage being most serious in eastern mainland Nova Scotia and southeastern Prince Edward Island. This insect has become a major threat to the success of coniferous plantation establishment and efforts are under way to minimize losses.

Sirococcus shoot blight remained the most serious plantation problem of red pine in western Nova Scotia and also caused damage in Prince Edward Island and southern New Brunswick. It has been shown that young plantations within 1 km of older red pine stands are at high risk from early infection and that the disease intensifies and may progress to the tree-killing stage as plantations become older.

Spruce budmoths were widespread in the Maritimes with an increase in populations in certain areas. About 10% of the white spruce shoots were affected in both New Brunswick and Nova Scotia, with damage somewhat higher at the few locations where observations were made in Prince Edward Island.

Armillaria root rot killed both young and old trees. The disease was common in young spruce and pine plantations and at least some tree mortality was recorded in 22% of 141 plantations assessed in New Brunswick.

A number of rusts affected various coniferous and hardwood species but the only major problem encountered in 1986 was the ash rust, a persistent disease mostly in ornamental situations in Nova Scotia. The needle rust on jack pine in New Brunswick plantations, common at damaging levels in past years, was still widespread in 1986 but the intensity of infection was much reduced.

Gypsy moth populations remained generally low in the infested areas, most represented by only a few egg masses. The insect made further inroads in southwestern New Brunswick as the known distribution extended inland. In Nova Scotia only minor shifts occurred in distribution. The Gypsy Moth Coordinating Committee was again in charge of overseeing all cooperative surveys.

Forest tent caterpillar outbreaks, drastically declining in the past few years, collapsed. The insect is not considered a major forest pest at present. The only residual population, found in eastern mainland Nova Scotia, is expected to collapse in 1987.

Other hardwood defoliators of some significance in 1986 included the fall cankerworm, oak leaf shredder, oak leafroller, and lesser maple spanworm. Large scale defoliation, mostly of red maple and oak, was caused only by the fall cankerworm which defoliated some 23 000 ha of forest in patches distributed throughout western Nova Scotia. The other insects were largely of local concern. The populations of the lesser maple spanworm declined sharply in eastern New Brunswick.

Birch casebearer, birch leafminer and birch skeletonizer caused varying levels of foliage browning in many areas throughout the Region although the degree of leaf browning was generally lower than in previous years. Larch casebearer populations collapsed and the predicted large scale defoliation, especially in western and central Nova Scotia, did not materialize. Poplar serpentine leafminer was again common on trembling aspen in northern New Brunswick and caused varying levels of foliage discoloration.

Dutch elm disease intensified within the area of known distribution and spread to new areas in all three provinces in 1986. The disease was found for the first time on Deer Island in New Brunswick and in Victoria County, Nova Scotia. Two more infected trees were identified in Prince County, Prince Edward Island in the area where the disease was first found in the Province in 1979. The annual elm tree loss rate in Fredericton dropped below 1% for the first time since 1974. The city still has more than 70% of its original elm tree population after battling the disease for 26 years.

Deterioration of white birch along the Bay of Fundy, caused by annually recurring early foliage browning since the late 1970's, continued in 1986. Symptom expression (brown leaves falling early) was much less pronounced than in previous years. The percentage of trees without at least some sign of deterioration on permanent plots decreased from 93% to 14% between 1982 and 1986. Research is underway to determine the cause of this condition.

A survey to determine the condition of sugar maple in New Brunswick showed that only 6.1% exhibited branch dieback in excess of 25% of the crown affected.

The Christmas tree pests, balsam gall midge and balsam twig aphid, were present at generally very low populations in much of the Region and no serious infestations were encounterd. New infections by the yellow witches' broom were lower than in previous years.

Foliage discoloration of pine associated with the presence of various species of mites was widespread but generally light throughout the Region. Moderate and severe discoloration occurred only in eastern mainland Nova Scotia.

Whitemarked tussock moth populations have been increasing and the insect is at an easily detectable level in much of the Region. Various levels of defoliation occurred in several areas in eastern Nova Scotia. Further population increases are anticipated in 1987.

Hemlock looper caused defoliation of balsam fir only in a very small area in Cumberland County, Nova Scotia.

Seed orchard pests and nursery and greenhouse pests did not cause serious problems. However, monitoring forest pests in these high value situations is important because of the low damage-tolerance levels acceptable in these situations.

The Acid Rain National Early Warning System program continued in 1986 with the assessment of conditions on all the ARNEWS plots, collection of foliage for analysis on some, and the determination of foliage retention at about 280 points throughout the Maritimes. Special plots were established to help explain the condition of red spruce.

Cooperative plantation pest surveys, involving federal and provincial forestry services and industry, were conducted in New Brunswick. There were 141 plantations and 14 thinned areas assessed, involving over 12 000 trees. Over 92% of the pine, spruce and larch trees were classified as healthy.

Pinewood nematode surveys at 185 locations, involving close to 400 trees, were conducted in 1985-1986. The pinewood nematode was found in three trees at three different locations in southeastern New Brunswick, with serious implications for international trade.

Pheromone surveys involved spruce budworm (an international, interregional research effort), forest tent caterpillar, jack pine budworm, European pine shoot moth, two spruce budmoths and gypsy moth. All of these, with the exception of spruce budworm and the spruce budmoths, are in at least semi-operational use.

The Forest Insect and Disease Survey is losing the services of two of its staff members due to retirements. Their departure means the loss of 75 years of experience that will be sorely missed.

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